



SMC Tailoring SMC-T-005
27 January 2014

Supersedes:
SMC-T-005 (2013)

Air Force Space Command

SPACE AND MISSILE SYSTEMS CENTER TAILORING

TAILORING OF RISK MANAGEMENT REQUIREMENTS IN SMC-S-001 (2013)

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED

| Report Documentation Page | | | | Form Approved OMB No. 0704-0188 | |
|--|------------------------------------|-------------------------------------|---|--|---------------------------------|
| Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. | | | | | |
| 1. REPORT DATE 27 JAN 2014 | | 2. REPORT TYPE N/A | | 3. DATES COVERED - | |
| 4. TITLE AND SUBTITLE SMC-T-005 (2014) Tailoring of Risk Management Requirements in SMC-S-001 (2013) | | | | 5a. CONTRACT NUMBER | |
| | | | | 5b. GRANT NUMBER | |
| | | | | 5c. PROGRAM ELEMENT NUMBER | |
| 6. AUTHOR(S) | | | | 5d. PROJECT NUMBER | |
| | | | | 5e. TASK NUMBER | |
| | | | | 5f. WORK UNIT NUMBER | |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) USAF Space and Missile Systems Center | | | | 8. PERFORMING ORGANIZATION REPORT NUMBER | |
| 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) | | | | 10. SPONSOR/MONITOR'S ACRONYM(S) | |
| | | | | 11. SPONSOR/MONITOR'S REPORT NUMBER(S) | |
| 12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release, distribution unlimited | | | | | |
| 13. SUPPLEMENTARY NOTES | | | | | |
| 14. ABSTRACT | | | | | |
| 15. SUBJECT TERMS | | | | | |
| 16. SECURITY CLASSIFICATION OF: | | | 17. LIMITATION OF ABSTRACT UU | 18. NUMBER OF PAGES 6 | 19a. NAME OF RESPONSIBLE PERSON |
| a. REPORT unclassified | b. ABSTRACT unclassified | c. THIS PAGE unclassified | | | |

FOREWORD

1. This tailoring document defines the Government's requirements and expectations for contractor performance in defense system acquisitions and technology developments.

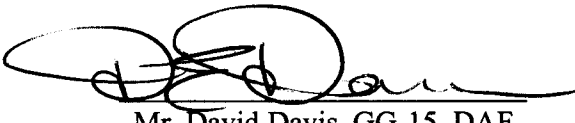
2. This SMC document was developed by the SMC/EN Risk Management Advisor and comprises tailoring to the risk management requirements of SMC-S-001 (2013), Systems Engineering Requirements and Products. This revision contains the following changes:

- Added a risk management planning process in section 4.2.4.1.1.
- Corrected minor typographical items throughout to improve readability.

3. Beneficial comments (recommendations, changes, additions, deletions, etc.) and any pertinent data that may be of use in improving this document should be forwarded to the following addressee using the Standardization Document Improvement Proposal appearing at the end of this document or by letter:

Division Chief, SMC/ENE
SPACE AND MISSILE SYSTEMS CENTER
Air Force Space Command
483 N. Aviation Blvd.
El Segundo, CA 90245

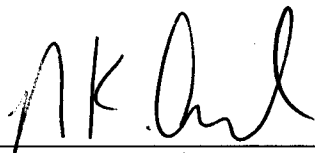
4. This tailoring document has been approved for use on all Space and Missile Systems Center/Air Force Program Executive Office - Space development, acquisition, and sustainment contracts.



Mr. David Davis, GG-15, DAF
SMC Chief Systems Engineer



Mr. Thomas Fitzgerald, SES, DAF
SMC Director of Engineering



Mr. Nick Awwad, GG-15, DAF
SMC/ENE

The following paragraphs shall replace section 4.2.1.4, Risk Management, and subordinate sections 4.2.1.4.1 and 4.2.1.4.1.1 of SMC-S-001 (2013), *Systems Engineering Requirements and Products*.

4.2.1.4 Risk Management

The contractor **shall** establish and implement a risk management program that includes and integrates the required systems engineering considerations specified in this document.

4.2.1.4.1 Required Products

- a. Risk Management Plan
- b. Risk List

4.2.1.4.1.1 Required Product Attributes

- a. The Risk Management Plan:
 - (1) Specifies a process that plans and documents the risk management process, identifies and adjudicates candidate risks, analyzes approved risks, develops and implements risk handling plans for all medium and high risks (and selected low risks), monitors progress associated with the implemented risk handling plans and feeds this information back to prior process steps, and documents risk information).
 - (2) Includes a risk management planning process step that incorporates items necessary to develop, implement, and document the risk management program via a Risk Management Plan (RMP) or equivalent. Relevant items may include a description of the risk management process steps (with inputs, tools and techniques, and outputs per step), candidate risk categories, ground rules and assumptions, roles and responsibilities for implementing risk management, risk board(s) and membership(s) as appropriate, metrics for monitoring and evaluating risk management results, provisions for risk management training, a description of risk management software used and/or templates for risk reports and reviews, and references.
 - (3) Includes a methodology for risk identification that encompasses both top-level approaches such as products (e.g., Work Breakdown Structure (WBS), processes, requirements/critical parameters, risk categories) and lower-level approaches (e.g., affinity; brainstorming; checklists; critical/near-critical path; diagramming methods; expert opinion; failure and reliability information; lessons learned from analogous programs; scenario analysis; strengths, weakness, opportunities, threats; trigger questions). See the Air Force Space and Missile Systems Center Risk Management Process Guide, Section 3.2, 7 December 2011¹ for additional information. While ad hoc risk identification may use one or more lower-level approaches, comprehensive risk identification should use one or more top-level approaches coupled with one or

¹ <https://acc.dau.mil/CommunityBrowser.aspx?id=659959>

more lower-level approaches.

- (4) Includes an established process for continued identification of risks throughout the program life cycle.
- (5) Includes risks associated with contractually identified variations, uncertainties, and evolutions in system environments.
- (6) Analyzes risks in terms of the likelihood (probability) of occurrence and the resulting consequence (impact) with regards to cost (including life-cycle costs), schedule, and technical. If qualitative methodologies are used (e.g., risk scales), the likelihood and consequence values are estimated and converted to risk levels (low, medium, and high) using the maximum of the resulting likelihood value(s) and the maximum of the three consequence values (cost, schedule, and technical) with a risk mapping matrix (e.g., AFPAM 63-128, 2009², Figure 12.2). (Note: Mathematical operations performed on likelihood and consequence values may yield erroneous results.) The qualitative risk analysis includes cost, schedule, and technical (including but not limited to design, manufacturing, support, technology, and threat) uncertainties and sensitivity to program, product, and process assumptions. The qualitative risk analysis also includes a methodology for prioritizing risks that have identical likelihood and consequence values.
- (7) Cost, performance, and schedule risks are analyzed using appropriate quantitative methods (e.g., Monte Carlo simulation), and include uncertainties and sensitivity to program, product, and process assumptions.
- (8) Includes the activities and criteria for identifying, analyzing, validating, and transitioning critical technologies from technology development and demonstration programs, including commercially developed technologies.
- (9) Includes technology readiness level (TRL) in performance, affordability, and life-cycle processes in the criteria. (Note: TRL and other readiness level scores are not risk because they are unrelated to the consequence dimension. They are, however, indicators of portions of the probability dimension of risk.)
- (10) Includes a structured process for evaluating risk handling options and developing a risk handling strategy (option plus implementation approach). At a minimum, the assumption (acceptance), avoidance, control (mitigation), and transfer options should be examined, the “best” option selected, and a suitable implementation approach developed for that option (or hybrid of multiple options).
- (11) Includes an approach for developing risk handling plans for all medium and high risks and selected low risks. Resources necessary to implement each activity contained in the risk handling plan should be identified and specified whether/not this resource is part of the baseline program. Low risks not requiring risk handling plans are

² <http://www.e-publishing.af.mil/> [search for “AFPAM63-128”]

documented in a program watch list and periodically re-evaluated to ensure that suitable progress is being made to either close the risk or reduce it to an acceptable level.

- (12) Includes secondary risk handling strategies for moderate and high risks as appropriate.
- (13) Includes a methodology for periodically monitoring (e.g., monthly, and at other times when needed) actual vs. planned progress for implemented risk handling plans in terms of risk likelihood and consequence scores (and risk level), and appropriate metrics and technical performance measures (TPMs). This information is fed back to update the: 1) risk handling plans, 2) risk analysis results, 3) risk identification information, and 4) risk management planning as needed.

b. The Risk List:

- (1) Includes suitable documentation for all low, medium, and high risks, and all risk identification, risk analysis, risk handling, and risk monitoring information.
- (2) Includes a separate list of all watch list items. The resulting risk lists are maintained in a suitable database that will permit interrogation of and updates to information over the life of the program.

SMC Standard Improvement Proposal

INSTRUCTIONS

1. Complete blocks 1 through 7. All blocks must be completed.
2. Send to the Preparing Activity specified in block 8.

NOTE: Do not use this form to request copies of documents, or to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements. Comments submitted on this form do not constitute a commitment by the Preparing Activity to implement the suggestion; the Preparing Authority will coordinate a review of the comment and provide disposition to the comment submitter specified in Block 6.

**SMC STANDARD
CHANGE
RECOMMENDATION:****1. Document Number**

SMC-T-005 (2014)

2. Document Date

27 January 2014

3. Document Title

Tailoring of Risk Management Requirements in SMC-S-001 (2013)

4. Nature of Change

(Identify paragraph number; include proposed revision language and supporting data. Attach extra sheets as needed.)

5. Reason for Recommendation**6. Submitter Information****a. Name****b. Organization****c. Address****d. Telephone****e. E-mail address****7. Date Submitted****8. Preparing Activity**

Space and Missile Systems Center
AIR FORCE SPACE COMMAND
483 N. Aviation Blvd.
El Segundo, CA 91245
Attention: SMC/ENE